

ABSTRACT OF THE DISCLOSURE:

A catalyst for decomposition of hydrocarbons, comprises porous oxide particles containing magnesium and aluminum, and fine metallic nickel particles which are present in the vicinity of surface of the respective porous oxide particles, and have an average particle diameter of 1 to 10 nm, said catalyst having a nickel content of 0.15 to 12% by weight based on the weight of the catalyst and a molar ratio of nickel to a sum of magnesium, nickel and aluminum of 0.001 to 0.12 in which a molar ratio of magnesium to aluminum (Mg:Al) is 4:1 to 1.5:1. The catalyst for decomposition of hydrocarbons, is capable of maintaining as small a particle size of metallic nickel particles as not more than 10 nm at a considerably reduced nickel content, and exhibits an excellent anti-coking property even under a low steam atmosphere.